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**ABSTRACT OF THE DISCLOSURE**

A process for manufacturing a water-resistant telecommunication cable. The cable has a solid and compact element having a water-soluble polymer material having vinyl alcohol/vinyl acetate copolymer having a hydrolysis degree of 60-95% and a polymerisation degree higher than 1,800 and at least one solid low-melting and one solid high melting plasticizers. The process produces continuously the water-soluble polymer material by separately feeding, in sequence, a multi-screw extruder, in the flow direction, with the copolymer and the high melting plasticizer melting and mixing them while transporting them through the extruder, and with the low melting plasticizer, melting and mixing them with the copolymer and the high melting plasticizer, subsequently homogenizing the copolymer and the plasticizers and finally discharging the melt, at a temperature lower than or equal to 205°C. A process for extruding the above PVA based water-soluble polymer material. The process allows extrusion of PVA with an enhanced productivity and reproducibility requiring shorter times for absorbing the plasticizers onto the polymer.